

# IDOL Data Admin

Software Version 12.0

## Administration Guide



Document Release Date: June 2018

Software Release Date: June 2018

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# Chapter 1: Introduction

Micro Focus IDOL Data Admin allows you to manage the contents of data indexed in IDOL servers to optimize the search experience for your end users. You can create and modify promotions or keywords to predefine the results that are returned to users, and control how users view them. You can also view statistical information to help you refine the rules that you created and make them more effective.

Key features include:

- **Promotions.** Display a document or a set of documents to the user based on specified criteria. Additionally, you can increase the relevance of a document or pin it to a fixed position in the results list.
- **Blacklist management.** Set up and manage a list of terms to exclude automatically from any query.
- **Synonyms.** Create a list of synonyms so that when users search for particular words, the results also include synonyms of their search terms.
- **Statistics.** View various statistics about the business rules you defined, such as top and bottom promotions, or terms that do not return any results.
- **Test search results.** Test actions to understand why a search returns a particular set of results.
- **Answer Bank.** Set up and maintain a store of reference questions and answers in a dynamic FAQ, to provide concise answers to natural language questions.





# Chapter 2: Set Up IDOL Data Admin

This section describes the supported platforms and software requirements for IDOL Data Admin.

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## Prerequisites

IDOL Data Admin supports the following operating systems:

- Windows Server 2008, 2008 R2, 2012, or 2012 R2
- Ubuntu 14.04 LTS
- RHEL/CentOS 6.4 and higher

IDOL Data Admin supports the following web browsers:

- Chrome (latest version)
- Firefox (latest version)
- Internet Explorer 11 or higher
- Edge

## External Requirements

Before you install IDOL Data Admin, you must install and configure the following components and software:

### IDOL Components

IDOL Data Admin requires access to the service and ACI ports of various IDOL components. The IDOL Data Admin web application requires TCP network access to these components. The IDOL components do not need to be installed on the same host as the IDOL Data Admin web application.

The following IDOL components are required:

- IDOL Community 12.0

**NOTE:**

IDOL Community requires an IDOL Agentstore subcomponent. However, you do not need to configure the details of the IDOL Community Agentstore component in IDOL Data Admin.

- IDOL Content 12.0

You can run IDOL Content as a stand-alone component, or in a distributed setup. If you use a distributed setup, IDOL Data Admin requires access to the service and ACI ports of the Distributed Action Handler (DAH) and Distributed Index Handler (DIH).

- IDOL View Server 12.0

### Search Optimizer Components

The following IDOL components are required for the Search Optimizer part of the IDOL Data Admin application. You do not need to configure these components if you want to use Answer Bank only.

- IDOL QMS 12.0
- IDOL QMS Agentstore 12.0

**NOTE:**

As well as the service and ACI ports, IDOL Data Admin also requires access to the index port of the QMS Agentstore component.

- IDOL Statistics Server 12.0

### Answer Bank Components

The following IDOL component is required for the Answer Bank part of the IDOL Data Admin application. You do not need to configure this component if you want to use Search Optimizer only.

- IDOL Answer Server 12.0 (requires access to the service and ACI ports).

This option is required only if you want to use the Answer Bank functionality.

## Third Party Software

- Java 1.8

## IDOL Data Admin Home Directory

You must specify the IDOL Data Admin home directory as a Java system property, either in a startup script or within the appropriate application server configuration, depending on how the application is being deployed.

The home directory contains the IDOL Data Admin configuration file (`config.json`). If this file is not found, IDOL Data Admin generates a default configuration file when the application starts.

You can edit the configuration file either from the Settings page in the application (recommended), or manually in a text editor. If you manually edit the file, you must restart IDOL Data Admin for any configuration changes to take effect.

By default, the home directory also contains the IDOL Data Admin log file (`dataadmin.log`). This file records details of application events (for example, sending statistics updates to connected clients), login events (for example, when a specific user logs in successfully), and user actions (for example, when a specific user deletes a promotion). It also records application error messages where applicable.

You can change the log file location by setting the new path on the Java run command. See [Configure the Log File Locations, on page 23](#).

**TIP:**

If you ever need to contact Micro Focus Technical Support, include a zip of this log file when you send your query to make it easier for Support to diagnose your problem.



## Chapter 3: User Roles

The IDOL Data Admin application has four user roles with different permission sets.

- **Search Optimizer.** A user of the IDOL Data Admin system with access to the Search Optimizer and Search sections. Users with this role have access to non-administrative functionality for Search Optimizer (that is, they can use Search Optimizer, but cannot configure it).
- **Answer Bank.** A user of the IDOL Data Admin system with access to the Answer Bank and Search sections. Users with this role have access to non-administrative functionality for Answer Bank (that is, they can use Answer Bank, but cannot configure it).
- **Data Admin.** A user of the IDOL Data Admin system with access to the Search Optimizer, Search, and Answer Bank sections. Users with this role have access to the same functionality as the **Search Optimizer** and **Answer Bank** roles.
- **Administrator.** An administrative user of the IDOL Data Admin system. Administrative users have access to the User Management and Settings pages to manage users and application configuration settings. These users also have the privileges of the **Data Admin** role.

IDOL Data Admin automatically creates the appropriate roles in the IDOL Community component for these user roles.

**NOTE:**

The roles in the IDOL Community component have different names to the role names that the application displays.

For backwards compatibility with earlier versions of IDOL Data Admin (IDOL Search Optimizer), the **Search Optimizer** and **Administrator** are called `IS0User` and `IS0Admin`, respectively, in the IDOL Community component.

The **Answer Bank** and **Data Admin** roles are called `AnswerBankUser` and `IDAUser` respectively.



# Chapter 4: Install IDOL Data Admin

IDOL Data Admin is available as an interactive installer.

**NOTE:**

To upgrade to IDOL Data Admin 12.0 from an earlier version, you must delete your existing configuration file before you install the new version. See [Upgrade IDOL Data Admin, on page 17](#).

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## Use the Interactive Installer (Recommended)

You can install IDOL Data Admin by using the interactive installer. This process creates all required directories, and sets up IDOL Data Admin to run as a service. During installation, you are prompted to specify the home directory and the paths for installation.

Use the following procedure to install IDOL Data Admin on Windows or Linux by using the interactive installer.

### To install IDOL Data Admin

- Run the installer as an Administrator user, and then follow the instructions, supplying the correct information when prompted.

IDOL Data Admin is installed to the location that you specified.

**NOTE:**

The installer requires administrative access to install IDOL Data Admin as a service, and to create the dedicated user that it uses to run IDOL Data Admin. On Microsoft Windows platforms, you must have administrative permissions. On Linux you must have root access (for example by `sudo`).

If you want to run IDOL Data Admin without administrative permissions, you can run the `dataadmin.jar` file directly from the terminal or command line.

## Use the Zip Package

The zip package contains a `.jar` file, and an `install` directory that contains the individual installation files.

## To install IDOL Data Admin on Ubuntu Linux

1. Ensure that all the software listed in [External Requirements, on page 9](#) is installed, running, and available.

2. Create a user and group to run IDOL Data Admin as. Micro Focus recommends that you use `dataadmin` as both the user name and the group name:

```
$ useradd dataadmin
```

3. Create a directory in which to install IDOL Data Admin. Micro Focus recommends that you use `/opt/dataadmin` as the installation directory.

```
$ mkdir /opt/dataadmin
```

4. Create a directory to serve as the home directory for IDOL Data Admin. Micro Focus recommends that you use `/opt/dataadmin/home` as the home directory.

```
$ mkdir /opt/dataadmin/home
```

5. Copy the IDOL Data Admin `dataadmin.jar` file into the installation directory:

```
$ cp dataadmin.jar /opt/dataadmin/
```

6. Recursively change the ownership of the installation directory:

```
$ chown -R dataadmin:dataadmin /opt/dataadmin
```

7. Deploy the startup script.

- **System V:**

```
$ cp install/linux/sysv/dataadmin.sh /etc/init.d/dataadmin  
$ chmod +x /etc/init.d/dataadmin  
$ update-rc.d dataadmin defaults 99
```

- **Upstart:**

```
$ cp install/linux/upstart/dataadmin.conf /etc/init/  
$ chmod +x /etc/init/dataadmin.conf
```

8. If you have used any non-default paths and so on during installation, edit the startup script to contain the values that you used.

9. Start the application.

- **System V:**

```
$ sudo /etc/init.d/dataadmin start
```

- **Upstart:**

```
$ sudo service dataadmin start
```

## To install Micro Focus IDOL Data Admin Administration Guide as a Windows Service

1. Download a copy of the Windows service wrapper from <https://github.com/ft-idol/winsw>, and change the name of the `winsw.exe` executable file to `dataadmin.exe`.



2. The `install` directory in the IDOL Data Admin installation zip package includes a `Windows` folder. This folder contains a `winsw` folder, which in turn contains a `dataadmin.xml` file. Move the `dataadmin.exe` file into this folder.
3. Ensure that the IDOL Data Admin home directory and port are correctly configured in the `dataadmin.xml` configuration file. You must also ensure that `dataadmin.exe`, `dataadmin.xml`, and `dataadmin.jar` are all in the same directory.
4. Run the following command from the Windows command line to install IDOL Data Admin as a service:

```
dataadmin.exe install
```

**NOTE:**

You can also use the following commands with `dataadmin.exe`:

- `uninstall`
- `start`
- `stop`
- `status`

For more information, see <https://github.com/ft-idol/winsw>.

Before you start IDOL Data Admin, follow the steps in [Configure IDOL Data Admin, on page 19](#), and ensure that you have set up the required user roles in IDOL Community. A user must be a member of one of these roles to log into IDOL Data Admin. See [User Roles, on page 13](#) for more information.

## Upgrade IDOL Data Admin

You can upgrade IDOL Data Admin to the latest version by installing the new version in the existing directory. The installer updates the installed files.

**NOTE:**

Before version 11.3.0, IDOL Data Admin was called IDOL Search Optimizer.

Before you run the new installer, Micro Focus strongly recommends that you move or delete the `config.json` file from your home directory.

If you attempt to run IDOL Data Admin with a version of `config.json` from an earlier version, it might have unexpected results.

When you start the new version of IDOL Data Admin, you must run the configuration wizard. See [Edit Configuration Settings, on page 19](#).



# Chapter 5: Edit Configuration Settings

This section describes how to configure IDOL Data Admin, Statistics Server, View Server, and Answer Server. It also includes information on how to configure language support.

**NOTE:**

If you upgrade to IDOL Data Admin 12.0 from an earlier version, you must delete your existing configuration file and run the configuration wizard again. See [Upgrade IDOL Data Admin](#), on page 17.

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## Configure IDOL Data Admin

Use the following procedure to configure IDOL Data Admin.

### To configure IDOL Data Admin

1. Run IDOL Data Admin once without a `config.json` file in your IDOL Data Admin home directory. When it runs the first time, IDOL Data Admin generates a default configuration file.

**NOTE:**

By default, the installer stores the IDA home directory in the `ProgramData` folder, which might be hidden by default in Windows.

2. Open the generated `config.json` file in a text editor and find the generated default user name and password (`login.defaultLogin.username` and `login.defaultLogin.password`).
3. In your web browser, go to `http://Hostname:Port`, where *Hostname* is the IP address or name of the machine on which IDOL Data Admin is installed, and *Port* is the port that you have installed IDOL Data Admin on (for example, `8080`).

**NOTE:**

For details of web browsers that are supported by Micro Focus IDOL Data Admin Administration Guide, see [Prerequisites, on page 9](#).


4. Log in using the default user name and password from the configuration file.  
The Settings page opens.
5. Fill in the details of your backend IDOL components. Click **Test Connection** for each server to confirm that a connection can be established from the IDOL Data Admin server.  
You might need different components depending on whether you want to set up and use Search Optimizer, Answer Bank, or both. For the list of required components, see [IDOL Components, on page 9](#).
6. (Optional) In the Search Engine section, set a URL to use to send queries to an external search engine. This search engine is used by the Answer Bank user interface when a user uses the Search Web options.
7. Click **Save Changes**.
8. In the setup wizard, click **Next**. The User Management page opens.
9. Add your users, and then use the credentials for one of those users to log into the application. See [User Roles, on page 13](#).

IDOL Data Admin is now ready for use.


## Change Application Configuration Settings

Users with the **Administrator** role can use the User Management and Settings pages to change the application configuration settings.

### To open the User Management page

1. In the toolbar on the top right of the page, click .
2. In the list, click **Users**.  
The User Management page opens.

### To open the Settings page

1. In the toolbar on the top right of the page, click .
2. In the list, click **Settings**.  
The Settings page opens.

## Configure Statistics Server

IDOL Data Admin uses Statistics Server to store statistics for Search Optimizer. Use the following procedures to configure Statistics Server and send statistics to the server.

**NOTE:**

The `install` folder is located in the installation zip package.

### To configure Statistics Server

1. Open `install/statsserver/cfg/statsserver-required-config.cfg`. This file contains the statistics definitions that the Statistics Server requires. Copy the definitions from `statsserver-required-config.cfg` to your Statistics Server configuration file.

**NOTE:**

If you want to include extra statistics definitions that are not included in `statsserver-required-config.cfg`, those extra statistics must have an IDOL name in order for the server to start.

2. Restart Statistics Server.

For information on how to send statistics to Statistics Server, see the *Query Manipulation Server Administration Guide*. For your convenience, a modified version of the Perl script described in the *Query Manipulation Server Administration Guide* is included in `install/statsserver/script/stats.pl`.

## Configure IDOL Language Support

You must configure UTF-8 encoding in IDOL for each language that your users want to use with IDOL Data Admin. For more information, see the *IDOL Server Administration Guide*.

## Configure View Server

IDOL View Server converts original documents into HTML format for viewing in a Web browser. It can also highlight search terms in the document, when displaying a search results. IDOL Data Admin uses IDOL View Server to create the document previews in searches.

There are three viewing modes. The appropriate one to use depends on how you index your documents, and your View Server configuration:

- **Universal.** In this mode, IDOL Data Admin requests document from a View Server that is configured in Universal Viewing mode. This mode allows View to use information in your data index to work out how to retrieve the original documents for viewing, by using a file, Web URL, or the Distributed Connector. To use this mode, you must enable universal viewing in your View Server configuration file. For more information, refer to the *IDOL Server Administration Guide*.

- **Reference Field.** In this mode, IDOL Data Admin requests documents from View Server by using a document reference field, which you can configure. In this case, the reference must be sufficient to identify the original location of the document, such as a URL or file path (if you configure IDOL View Server to view local files).
- **Connector.** In this mode, IDOL Data Admin uses a connector to retrieve the original document. The connector can retrieve the original document from the source repository, which simplifies the storage and retrieval. You must provide the host and port of the connector to use. IDOL Data Admin uses the `AUTN_IDENTIFIER` document field and connector group to request the original document.


You can use any connector that supports the View action. If you want to retrieve documents from multiple repositories, you can use the Distributed Connector. For more information about the IDOL configuration for this set up, refer to *IDOL Expert*.

**NOTE:**

If a document does not have the required reference field or connector group and identifier, IDOL Data Admin renders the title and document content from the Content index in the document previews. In this case, it uses the `DRETITLE` and `DRECONTENT` document fields to populate the title and content, respectively.

Users with the **Administrator** role can use the Settings pages to configure the IDOL View Server.

### To configure IDOL View Server

1. In the toolbar on the top right of the page, click .
2. In the list, click **Settings**.  
The Settings page opens.
3. Find the **View** section, and specify the host and ACI port of your IDOL View Server.
4. From the **Viewing Mode** list, select the mode to use. Depending on the mode that you use, further options are required:
  - In **Reference Field** mode, specify the IDOL reference field to use to identify your documents in IDOL View Server.
  - In **Connector** mode, specify the host name and ACI port of the connector to use to retrieve documents.
5. Click **Test Connection** to ensure that IDOL Data Admin can connect to your IDOL View Server and Distributed Connector (if required).

**NOTE:**

In Universal mode, **Test Connection** checks the connection to the IDOL View Server, but does not check whether the other components that View needs to access are configured correctly. You must check any additional components in your View Server configuration.

6. Click **Save Changes**.

## Configure Answer Server


The IDOL Data Admin Answer Bank allows you to set up and maintain a store of reference questions and answers in Answer Server.

IDOL Answer Server provides several systems for natural language question answering. The Answer Bank system allows you to create and maintain a dynamic FAQ. When a user asks a question, Answer Server attempts to match it to any existing questions in the Answer Bank store, and provides the appropriate stored answer.

The Answer Server configuration can contain multiple systems, each of which retrieves answers from a different source. You must configure IDOL Data Admin to connect to the appropriate Answer Bank system.

Users with the **Administrator** role can use the Settings pages to configure the Answer Server system.

### To configure Answer Server

1. In the toolbar on the top right of the page, click .
2. In the list, click **Settings**.  
The Settings page opens.
3. In the **Answer Server** section, select the appropriate Answer Bank system from the list.
4. Click **Save Changes**.

On the Settings page section for Answer Server you can also set the Question Equivalence Min Score. This value affects how closely a question must match the existing questions in a question equivalence class for it to return as a possible equivalent question.

## Configure the Log File Locations

By default, IDOL Data Admin creates log files under the home directory. You can configure IDOL Data Admin to store these log files in a different location by setting the `logging.path` property in the java run command.

### To change the location of the log files

- At the command line, send the java run command with the `logging.path` argument set to the location where you want to store your log files. For example:

```
java -Dlogging.path=[log file directory] -Didol.dataadmin.home=[home directory] -Dserver.port=[port] -jar dataadmin.jar
```

IDOL Data Admin creates the specified directory if it does not exist, as long as the service has the appropriate permissions. It creates the logs directly in the specified directory.

If you run IDOL Data Admin as a service on Windows, you can also add the `logging.path` property to the `dataadmin.xml` file.

If you run IDOL Data Admin as a service on Linux, you can modify the `IDA_LOGGING_DIR` variable in the start scripts (`dataadmin.sh` for SystemV, or `dataadmin.conf` for Upstart).

When you modify the IDOL Data Admin configuration by modifying the XML file or start scripts, you must restart IDOL Data Admin to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service dataadmin restart` to restart the service.

## Configure IDOL Logs

You can configure IDOL Data Admin to generate an `idol-access.log` file. This log stores information about all the actions it makes to IDOL component ACI and service ports. It includes the following information:

- the user that sent the query.
- the IP address the user is connecting from.
- the IDOL component that the query is sent to (for example, QMS or Content)
- the host and port of the IDOL component.
- the full query that is sent to the IDOL component.
- the status code that the IDOL component returns.
- the time taken to complete the request.

You can turn on IDOL logging by setting the `idol.log.enabled` system property.

When you turn on logging, you can optionally turn off the information about time taken to complete requests by setting the `idol.log.timing.enabled` system property.

### To turn on IDOL logging

- At the command line, send the `java run` command with the `idol.log.enabled` argument set to **true**. For example:

```
java -Didol.log.enabled=true -Didol.dataadmin.home=[home directory] -  
Dserver.port=[port] -jar dataadmin.jar
```

### To turn off timing information in the IDOL logs

- At the command line, send the `java run` command with the `idol.log.timing.enabled` argument set to **false**. To enable general IDOL logging, you must also set the `idol.log.enabled` argument to **true**. For example:

```
java -Didol.log.enabled=true -Didol.log.timing.enabled=false -  
Didol.dataadmin.home=[home directory] -Dserver.port=[port] -jar dataadmin.jar
```



If you run IDOL Data Admin as a service on Windows, you can also add the `idol.log.enabled` and `idol.log.timing.enabled` properties to the `dataadmin.xml` file.

If you run IDOL Data Admin as a service on Linux, you can add the argument to the existing arguments variable in the start scripts (`dataadmin.sh` for SysV, or `dataadmin.conf` for Upstart).

When you modify the IDOL Data Admin configuration by modifying the XML file or start scripts, you must restart IDOL Data Admin to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service dataadmin restart` to restart the service.

## Use an Action ID

You can optionally configure IDOL Data Admin to send an action ID to IDOL with each request, which can help with tracking and troubleshooting.

When you enable action IDs, IDOL Data Admin generates the action ID with a UUID and a prefix, which you can configure. The default prefix is **DataAdmin-**. For example, `DataAdmin-b17a4a79-b3ed-4706-80a6-06404140e815`.

### To use an action ID in IDOL requests

- At the command line, send the java run command with the `idol.log.actionid.enabled` argument set to **true**.

Optionally set the `idol.log.actionid.prefix` argument to the prefix that you want to use for your action IDs. For example:

```
java -Didol.log.actionid.enabled=true -Didol.log.actionid.prefix=DataAdmin- -  
Didol.dataadmin.home=[home directory] -Dserver.port=[port] -jar dataadmin.jar
```

#### **TIP:**

This example turns on the action ID without turning on logging, which means that the action ID is displayed in IDOL component GRL requests. To store the action ID in the logs, you can also turn on logging, by adding the `idol.log.enabled` argument.

If you run IDOL Data Admin as a service on Windows, you can also add the `idol.log.actionid.enabled` and `idol.log.actionid.prefix` properties to the `dataadmin.xml` file.

If you run IDOL Data Admin as a service on Linux, you can add the argument to the existing arguments variable in the start scripts (`dataadmin.sh` for SysV, or `dataadmin.conf` for Upstart).

When you modify the IDOL Data Admin configuration by modifying the XML file or start scripts, you must restart IDOL Data Admin to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service dataadmin restart` to restart the service.

## Configure the Java Heap Size

You can configure the Java heap size for IDOL Data Admin by setting the size in the Java run command.

### To configure the Java heap size

- At the command line, send the java run command with the `Xmx"[HeapSize]"m` argument set. For example:

```
java -Xmx2048m -Didol.dataadmin.home=[home directory] -Dserver.port=[port] -jar dataadmin.jar
```

The default value is 1024.

If you run IDOL Data Admin as a service on Windows, you can also add the `Xmx` property to the `dataadmin.xml` file.

If you run IDOL Data Admin as a service on Linux, you can modify the `JAVA_MAX_HEAP_SIZE` variable in the start scripts (`dataadmin.sh` for SystemV, or `dataadmin.conf` for Upstart).

When you modify the IDOL Data Admin configuration by modifying the XML file or start scripts, you must restart IDOL Data Admin to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service dataadmin restart` to restart the service.

## Configure IDOL Data Admin to Use SSL

By default, IDOL Data Admin runs in plain HTTP mode. You can configure it to use SSL communications, by setting the appropriate system properties in the Java run command.

### NOTE:

If you enable SSL, you cannot use plain HTTP with IDOL Data Admin.

### To configure IDOL Data Admin to use SSL

- Start IDOL Data Admin with the Java run command, and include the following arguments:

```
-Dserver.ssl.key-store=path_to_keystore  
-Dserver.ssl.key-store-password=keystore_password  
-Dserver.ssl.key-password=key_password  
-Dserver.port=server_port
```

where,

<code><i>path_to_keystore</i></code>	is the path to a keystore. You must create a keystore and import your certificates
--------------------------------------	--

	<p>into it. By default, IDOL Data Admin expects this keystore to be in JKS format. For more information on JKS keystore creation, see <a href="https://docs.oracle.com/cd/E19509-01/820-3503/ggfen/index.html">https://docs.oracle.com/cd/E19509-01/820-3503/ggfen/index.html</a>.</p> <p><b>NOTE:</b> If you want to use a keystore in a different format, you must also set the <code>-Dserver.ssl.key-store-type</code> argument to the type of keystore that you want to use. For example:</p> <pre>-Dserver.ssl.key-store-type=pkcs12</pre>
<code>keystore_password</code>	is the password for the keystore.
<code>key_password</code>	is the password for the key inside the keystore.
<code>server_port</code>	is the port to use for IDOL Data Admin. To use SSL, you must change this value from the default port (that is, you must not use port 8080). Typically you use port 8443, but you can use any valid port value.

For example:

```
java -Dserver.ssl.key-store=/etc/ssl/private/keystore.jks -Dserver.ssl.key-store-password=MyPassword -Dserver.ssl.key-password=KeyPassword -Didol.dataadmin.home=[home directory] -Dserver.port=8443 -jar dataadmin.jar -uriEncoding utf-8
```

If you run IDOL Data Admin as a service on Windows, you can also add the same arguments to the `dataadmin.xml` file.

If you run IDOL Data Admin as a service on Linux, you can add the argument to the existing arguments variable in `dataadmin.sh` for SysV, or `dataadmin.conf` for Upstart.

When you modify the IDOL Data Admin configuration by modifying the XML file or start scripts, you must restart IDOL Data Admin to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service dataadmin restart` to restart the service.

For more information on installing and running IDOL Data Admin as a service on Windows or Linux, see [Install IDOL Data Admin, on page 15](#).

## Configure IDOL Data Admin with a Reverse Proxy

You can use IDOL Data Admin with a reverse proxy over either HTTP(S) or Apache JServ Protocol (AJP).

With a reverse proxy, you can choose to manage authentication for your users, and the reverse proxy allows users to access the IDOL Data Admin application with a default set of user roles, which you can define.

**NOTE:**

You cannot configure the reverse proxy to assign an administrator user role. Your administrators must have access to the IDOL Data Admin application by another route.

Using a reverse proxy can allow you to:

- add security and protect the identity of your backend services.
- pre-authenticate your users, enabling a single sign-on workflow.
- provide SSL termination.
- improve performance by adding compression or caching.

The following sections describe how to configure IDOL Data Admin to use a reverse proxy, and how to configure various types of reverse proxy.

## Configure IDOL Data Admin to Use the Reverse Proxy

You configure IDOL Data Admin to use a reverse proxy by setting the `server.reverseproxy` system property.

When you set `server.reverseproxy` to **true**, the IDOL Data Admin application listens for AJP connections on a port that you can define by using the `server.ajp.port` system property.

The reverse proxy must translate incoming HTTP(S) connections from your clients into AJP connections to IDOL Data Admin. In AJP mode, the application reads the user name from incoming requests, so you must set up remote authentication. You cannot encrypt the connection from the reverse proxy to the application.

By default, `server.reverseproxy` is **false**. In this case, the IDOL Data Admin application is available only over HTTP or HTTPS. Remote authentication is not possible in this mode. However, you can encrypt the connection with SSL. In this mode, users authenticate by using the proxied login page.

In both these methods, the reverse proxy must rewrite the request path, response Location headers, and cookie paths.

## WebSocket Protocol

IDOL Data Admin uses the WebSocket protocol to communicate between the user Web browsers and the Java process. Your reverse proxy must tunnel this communication from the client to the application, in addition to forwarding HTTP/AJP requests.

## Set the Reverse Proxy System Property

You can use the following procedure to set the `server.reverseproxy` system property.

### To configure IDOL Data Admin to use a reverse proxy

- At the command line, send the `java run` command with the `server.reverseproxy` argument set to **true**. For example:

```
java -Dserver.reverseproxy=true -Didol.dataadmin.home=[home directory] -  
Dserver.port=[port] -jar dataadmin.jar
```

By default, this option opens an AJP port on port 8009. To use a different port, set the `server.ajp.port` argument to the correct port number.

You can also specify the roles to assign to your users by setting the `ida.reverse-proxy.pre-authenticated-roles` system property to a comma-separated list of IDOL Data Admin Community role names (see [User Roles, on page 13](#)). The default value for this property is `IDAUser`.

**NOTE:**

This setting does not assign any roles in the Community component. It gives all users that use the reverse proxy the same permissions to access IDOL Data Admin.

If you run IDOL Data Admin as a service on Windows, you can also add the `server.reverseproxy` property to the `dataadmin.xml` file.

If you run IDOL Data Admin as a service on Linux, you can add the arguments to the existing arguments variable in the start scripts (`dataadmin.sh` for SystemV, or `dataadmin.conf` for Upstart).

When you modify the IDOL Data Admin configuration by modifying the XML file or start scripts, you must restart IDOL Data Admin to apply your configuration changes.

On Upstart, you must also run `initctl reload-configuration` before you restart, to apply the init file changes. You can then run `service dataadmin restart` to restart the service.

## Configure the Reverse Proxy

The following sections provide configuration examples for using different reverse proxy servers.

### Apache 2

Apache 2 is a free open source Web server that you can configure as a reverse proxy by using the `mod_proxy` module.

The following configuration example exposes the IDOL Data Admin running on `ida.example.com` at `https://localhost:443/dataadmin`, using AJP to enable remote authentication. The application AJP port is 8009, and the HTTPS port is 8443.

For this configuration, you must enable the `mod_proxy`, `mod_proxy_ajp`, `mod_proxy_wstunnel`, and `mod_ssl` modules.

```
SSLEngine on  
SSLProxyEngine on
```

```
SSLCertificateFile /path/to/my-certificate.crt  
SSLCertificateKeyFile /path/to/my-key.key
```

```
<Location /dataadmin/>  
  AuthType YOUR_AUTH_MODULE  
  require valid-user
```

```
ProxyPass "ajp://ida.example.com:8009/"
ProxyPassReverse /

# Ensure WebSocket protocol is forwarded correctly
RewriteEngine on
RewriteCond %{HTTP:UPGRADE} ^websocket$ [NC]
RewriteCond %{HTTP:CONNECTION} Upgrade$ [NC]
RewriteRule /api/user/socket/(.*) wss://ida.example.com:8443/api/user/socket/$1
[P]
</Location>
```

The following configuration example exposes the IDOL Data Admin running on `ida.example.com` at `https://localhost:443/dataadmin`, using HTTPS to communicate with the application.

For this configuration, you must enable the `mod_proxy`, `mod_proxy_http`, `mod_proxy_wstunnel`, and `mod_ssl` modules.

```
SSLEngine on
SSLProxyEngine on

SSLCertificateFile /path/to/my-certificate.crt
SSLCertificateKeyFile /path/to/my-key.key

<Location /dataadmin/>
  AuthType YOUR_AUTH_MODULE
  require valid-user

  ProxyPass "https://ida.example.com:8443/"
  ProxyPassReverse /

  # Ensure WebSocket protocol is forwarded correctly
  RewriteEngine on
  RewriteCond %{HTTP:UPGRADE} ^websocket$ [NC]
  RewriteCond %{HTTP:CONNECTION} Upgrade$ [NC]
  RewriteRule /api/user/socket/(.*) wss://ida.example.com:8443/api/user/socket/$1
[P]
</Location>
```

## SAML

You can configure Apache 2 to act as a SAML service provider, which ensures that users are authenticated before passing them through to the application, and sends them to an identity provider if they are not.

For this configuration, you must install and enable the `mod_auth_mellon` module.

```
SSLEngine on
SSLProxyEngine on

SSLCertificateFile /path/to/my-certificate.crt
SSLCertificateKeyFile /path/to/my-key.key
```

```
<Location /dataadmin/>
  AuthType "Mellon"
  AuthName YOUR_AUTH_NAME
  Require valid-user

  MellonEnable "auth"
  MellonSecureCookie On
  MellonVariable "session_cookie"
  MellonUser "NAME_ID"
  MellonEndpointPath "/mellon"
  MellonDefaultLoginPath "/"

  # Session TTL seconds
  MellonSessionLength 86400

  MellonSPMetadataFile /path/to/service/provider/metadata
  MellonSPPrivateKeyFile /path/to/service/provider/key/file
  MellonSPCertFile /path/to/service/provier/cert/file
  MellonIdPMetadataFile /path/to/idp/metadata/file

  ProxyPass "https://ida.example.com:8443/"
  ProxyPassReverse /

  # Ensure WebSocket protocol is forwarded correctly
  RewriteEngine on
  RewriteCond %{HTTP:UPGRADE} ^websocket$ [NC]
  RewriteCond %{HTTP:CONNECTION} Upgrade$ [NC]
  RewriteRule /api/user/socket/(.*) wss://ida.example.com:8443/api/user/socket/$1
[P]
</Location>
```

## NGINX

Nginx is a free open source Web server and reverse proxy. It does not support the AJP protocol, so remote authentication is not possible.

The following example configuration exposes the IDOL Data Admin instance running on `https://ida.example.com:8443/ida` at `https://localhost:443/dataadmin`.

```
server {
    listen 443 ssl default_server;

    ssl_certificate /path/to/my-certificate.crt;
    ssl_certificate_key /path/to/my-key.key

    location /dataadmin/ {
        proxy_pass https://ida.example.com:8443/ida;
        proxy_cookie_path /ida /dataadmin;
```

```
# Ensure WebSocket protocol is forwarded correctly
proxy_http_version 1.1;
proxy_set_header Upgrade $http_upgrade;
proxy_set_header Connection "upgrade";
}
}
```

## Internet Information Services (IIS)

IIS is a Web server created by Microsoft that is built into many versions of Windows. You can configure it as a reverse proxy in HTTP mode, by using the URL Rewrite and Application Request Routing (ARR) modules. In later versions of IIS, the Web server can automatically proxy WebSockets connections.

You can enable the AJP protocol by using the Apache Tomcat ISAPI redirector module.

To reverse proxy in HTTP mode, you must configure a URL Rewrite rule that redirects incoming requests to the application, and another rule that rewrites Location headers in the response.

## Configure Multiple Query Manipulation Servers

IDOL Data Admin uses QMS to manage your keywords and promotions for Search Optimizer. If you have more than one QMS, you can use IDOL Data Admin to manage multiple instances, by adding an additional configuration file called `additionalIdolConfigurations.json` in the same directory as your IDOL Data Admin `config.json` file.

The `additionalIdolConfigurations.json` contains a `configurations` array, which contains one configuration object for each QMS group that you want to include.

Each QMS group configuration must contain the properties in the following table.

Property	Type	Description
<code>displayName</code>	String	The display name to use for the QMS group in the IDOL Data Admin user interface. The IDOL Data Admin user interface shows this display name in a menu at the top of the window, which allows you to switch between your different QMS groups.
<code>qms</code>	Object	The configuration object for the QMS, which defines the host, port, and other settings. This object contains the same properties and options as the <code>qms</code> object in your <code>config.json</code> file.
<code>agentstore</code>	Object	The configuration object for the QMS Agentstore component for this QMS, which defines the host, port, and other settings. This object contains the same properties and options as the <code>agentstore</code> object in your <code>config.json</code> file.
<code>statsServer</code>	Object	The configuration object for the Statistics Server for this QMS group, which defines the host, port, and other settings. This object contains the same properties and options as the <code>statsServer</code> object in your <code>config.json</code> file.



You can also optionally include the properties in the following table.

Property	Type	Description
view	Object	The configuration object for the IDOL View Component to use for this QMS group, which defines the host, port, and other settings. This object contains the same properties and options as the <code>view</code> object in your <code>config.json</code> file. If you do not configure the <code>view</code> object, IDOL Data Admin uses the default View component defined in your main IDOL Data Admin configuration file.
content	Object	The configuration object for the IDOL Content component for this QMS, which defines the host, port, and other settings. This object contains the same properties and options as the <code>content</code> object in your <code>config.json</code> file. If you do not configure the <code>content</code> object, IDOL Data Admin uses the default Content component defined in your main IDOL Data Admin configuration file.

## Example Configuration

The following JSON example provides an example configuration for one extra QMS group, in addition to the default QMS group defined in your `config.json`.

```
{
  "configurations" : [
    {
      "displayName": "qms_1:16000",
      "qms": {
        "server": {
          "protocol": "HTTP",
          "host": "qms1.example.com",
          "port": 16000,
          "indexProtocol": "HTTP",
          "indexPort": null,
          "serviceProtocol": "HTTP",
          "servicePort": null
        },
        "blacklist": "ISO_BLACKLIST",
        "typeAheadMode": "Index",
        "enabled": true
      },
      "agentstore": {
        "enabled": true,
        "distributed": false,
        "dah": {
          "protocol": "HTTP",
          "host": "qms1.example.com",
          "port": 9160,
          "serviceProtocol": "HTTP",
          "servicePort": 9162
        }
      }
    }
  ]
}
```

```
    },  
    "dih": {  
      "protocol": "HTTP",  
      "host": "qms1.example.com",  
      "port": 9170,  
      "indexProtocol": "HTTP",  
      "indexPort": 9171,  
      "serviceProtocol": "HTTP",  
      "servicePort": 9172  
    },  
    "standard": {  
      "protocol": "HTTP",  
      "host": "qms1.example.com",  
      "port": 9250,  
      "indexProtocol": "HTTP",  
      "indexPort": 9251,  
      "serviceProtocol": "HTTP",  
      "servicePort": 9252  
    }  
  },  
  "statsServer": {  
    "protocol": "HTTP",  
    "host": "qms1.example.com",  
    "port": 19870,  
    "productType": [  
      "IDOLPROXY",  
      "STATS",  
      "DAH"  
    ],  
    "enabled": true  
  }  
}  
]  
}
```

# Chapter 6: Clustering

IDOL Data Admin 12.0 does not support clustering of the web application.



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